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Ari Heikkinen

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EXAMINER

LENNOX, NATALIE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/512,099	Applicant(s) HEIKKINEN, ARI	
	Examiner NATALIE LENNOX	Art Unit 2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 October 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/21/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claims 19-21 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

With respect to claims 19 and 20, applicant claims a "software tool for speech processing, comprising program code portions," and a "computer program comprising program code section." Both the software tool and the computer program are computer programs *per se*. Regarding claim 21, applicant claims "a computer program product for speech processing wherein said computer program product comprises program code sections stored on a computer readable medium," however applicant's disclosure does not specifically mention or define what the computer program product is and therefore it is interpreted as a computer program *per se*. Computer programs *per se* are not physical "things," they are neither computer components nor statutory processes, as they are not "acts" being performed. In other words, computer programs *per se* are nonfunctional descriptive material that does not constitute a statutory process, machine, manufacture or composition of matter. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer which permit the computer program's functionality to be realized. In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which

defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 6 and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 6 recites the limitation "said at least two pulses" in line 4. There is insufficient antecedent basis for this limitation in the claim. Claim 6 is dependent on claim 4 which cites "at least one pulse," and not "two pulses." Examiner acknowledges applicant's intentions and for examination purposes interprets claim 6 to read "determining a pulse value from the distances between at least two pulses."

Claim 10 recites the limitation "said at least one pulse" in line 8. There is insufficient antecedent basis for this limitation in the claim. Claim 10 is dependent on claim 2, which in turn is dependent on claim 1. Neither claims 2 nor 1 cite "at least one pulse," in fact not until claim 4 an "at least one pulse" is introduced. According to the preamble of claim 10 "wherein said determining of said positions comprises," examiner interprets the claim as being dependent on claim 4 for examining purposes.

Claim 26 recites the limitation "the network device according to claim 22" in line 1. There is insufficient antecedent basis for this limitation in the claim. Claim 26 is

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dependent from claim 22, however claim 22 does not mention any "network device," in contrast claim 25 cites "a network device" in line 1. For purposes of examination, examiner interprets claim 26 as being dependent from claim 25.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-21, 25, and 27 are rejected under 35 U.S.C. 102(e) as being anticipated by Stachurski et al. (US Patent 7,222,070), hereinafter Stachurski.

As per claim 1, Stachurski teaches a method for providing at least one phase-characterizing parameter for speech processing operable with hybrid speech coders and hybrid speech decoders, comprising:

obtaining characteristics of a preceding frame coded according to a waveform matching speech coding; said preceding frame according to said waveform matching speech coding being immediately preceding in time to a succeeding frame according to a parametric speech coding characterized by (Col. 12, lines 6-12 and 21-29, Col. 4, lines 20-32, and Col. 6, lines 38-45)

deriving said at least one phase-characterizing parameter for processing said succeeding frame according to said parametric speech coding from said obtained characteristics (Col. 11, line 50 to Col. 12, line 29, more specifically Col. 12, lines 6-12 and 21-29, and Col. 6, lines 38-45);
wherein said at least one phase-characterizing parameter is employable to prevent, a misalignment of said frames (Col. 12, lines 6-12 and Col. 6, lines 38-45).

As per claim 2, Stachurski teaches the method according to claim 1, wherein said speech processing is a speech encoding operation (Col. 12, lines 6-12).

As per claim 3, Stachurski teaches the method according to claim 1, wherein said speech processing is a speech decoding operation (Col. 3, lines 29-34 and 61-67).

As per claim 4, Stachurski teaches the method according to claim 1, wherein said step of obtaining characteristics of said preceding frame according to said waveform matching speech coding comprises:

determining positions of at least one pulse of said preceding frame according to said waveform matching speech coding (Col. 11, line 50 to Col. 12, line 29, more specifically, Col. 11, line 57 to Col. 12, line 5 and Col. 12, lines 21-29.); and

determining a position of a last pulse of said at least one pulse (Col. 11, line 50 to Col. 12, line 29, more specifically, Col. 11, line 57 to Col. 12, line 5 and Col. 12, lines 21-29).

As per claim 5, Stachurski teaches the method according to claim 4, wherein said at least one pulse is at least one pitch pulse (Col. 3, lines 51-54 and 61-67).

As per claim 6, Stachurski teaches the method according to claim 4, wherein said step of obtaining characteristics of said preceding frame according to a waveform matching speech coding comprises:

determining a pulse value from the distances between said at least two pulses (Col. 12, lines 41-51 and Col. 5, lines 39-58).

As per claim 7, Stachurski teaches the method according to claim 4, wherein said obtaining characteristics of said preceding frame according to a waveform matching speech coding comprises:

obtaining a pulse value from an antecedent frame (Col. 6, lines 38-45 and Col. 12, lines 21-51).

As per claim 8, Stachurski teaches the method according to claim 6, wherein said at least one phase-characterizing parameter is obtained from said position of said last pulse relative to a size of said preceding frame according to said waveform matching speech coding in relation to said pulse value (Col. 6, lines 38-45 and Col. 12, lines 21-51).

As per claim 9, Stachurski teaches the method according to claim 1, wherein said at least one phase-characterizing parameter is at least one phase value (Col. 6, lines 38-45).

As per claim 10, Stachurski teaches the method according to claim 2, wherein said determining of said positions comprises:

determining average energy values from said preceding frame according to said waveform matching speech coding (Col. 8, lines 40-54, “peakiness” and Col. 11, line 50 to Col. 12, line 29)

evaluating said average energy values in order to determine positions of at least one local maximal energy value (Col. 11, line 50 to Col. 12, line 34, more specifically, “single sharp pulse” from Col. 11, lines 57-63 and “voicing level and pitch” from Col. 12, lines 30-34), and

assigning said positions of said at least one local maximal energy value to said positions of said at least one pulse (Col. 11, line 50 to Col. 12, line 5).

As per claim 11, Stachurski teaches the method according to claim 10, wherein said determining said average energy values comprises the step of:

employing a sliding average algorithm in order to determine said average energy values (Col. 8, lines 40-54, more specifically lines 44-54, and Col. 7, line 40.).

As per claim 12, Stachurski teaches a method for detecting a transition misalignment in transition from a preceding frame according to a waveform matching speech coding to a succeeding frame according to a parametric speech coding, said preceding frame according to said waveform matching speech coding being immediately preceding in time to said succeeding frame according to said parametric speech coding, comprising:

obtaining characteristics of said preceding frame according to said waveform matching speech coding, obtaining characteristics of said succeeding frame according to said parametric speech coding (Col. 12, lines 52-65), and

evaluating said obtained characteristics in order to detect said transition misalignment (Col. 12, lines 52-65).

As per claim 13, Stachurski teaches the method according to claim 12, wherein said obtaining characteristics of said preceding frame according to said waveform matching speech coding comprises:

determining positions of at least one pulse from said preceding frame according to said waveform matching speech coding (Col. 11, lines 13-22 and Col. 12, lines 6-12) and

determining a position of a last pulse of said at least one pulse (Col. 11, lines 13-22 and Col. 12, lines 6-12),

and wherein said obtaining characteristics of said succeeding frame according to said parametric speech coding comprises:

determining positions of at least one pulse from said succeeding frame according to said parametric speech coding (Col. 11, lines 10-12 and 57-63, and Col. 12, lines 6-12) and

determining a position of a first pulse of said at least one pulse (Col. 11, lines 10-12 and 57-63, and Col. 12, lines 6-12).

As per claim 14, Stachurski teaches the method according to claim 13, wherein said pulses are pitch pulses (Col. 3, lines 51-54 and 61-67).

As per claim 15, Stachurski teaches the method according to claim 13, wherein said evaluating said obtained information comprises:

determining a distance of said position of said last pulse and said position of said first pulse (Col. 9, lines 5-11) and

comparing said distance with a pulse value (Col. 9, lines 19-22).

As per claim 16, Stachurski teaches the method according to claim 15, wherein said pulse is obtained by the step of:

determining said pulse value from distances of said pulses included in said preceding frame according to said waveform matching speech coding (Col. 9, lines 19-22).

As per claim 17, Stachurski teaches the method according to claim 15, wherein said pulse is obtained by the step of:

determining said pulse value from a phase contour of an antecedent frame according to said parametric speech coding (Col. 12, lines 6-29).

As per claim 18, Stachurski teaches the method according to claim 12, wherein said determining of said positions comprises:

determining average energy values from said frame (Col. 8, lines 40-54, “peakiness” and Col. 11, line 50 to Col. 12, line 29) and

evaluating said average energy values in order to, determine positions of at least one local maximal energy value (Col. 11, line 50 to Col. 12, line 34, more specifically, “single sharp pulse” from Col. 11, lines 57-63 and “voicing level and pitch” from Col. 12, lines 30-34) and

assigning said positions of said at least one local maximal energy value to said positions of said at least one pulse (Col. 11, line 50 to Col. 12, line 5).

As per claim 19, Stachurski teaches a software tool for speech processing, comprising program code portions for carrying out the operations according to claim 1, when said program is implemented in a computer program for executing on a computer, a user terminal or a network device (Fig. 7, Col. 1, lines 12-14, and Col. 6, lines 46-51).

As per claim 20, Stachurski teaches a computer program for speech processing, comprising program code section for carrying out the operations according to claim 1, when said program is run on a computer, a user terminal or a network device (Figs. 1a-1d, Fig. 7, Col. 1, lines 12-14, and Col. 6, lines 46-51).

As per claim 21, Stachurski teaches a computer program product for speech processing, wherein said computer program product is comprising comprises program code sections stored on a computer readable medium for carrying out the method according to claim 1, when said program product is run on a computer, a user terminal or network device (Figs. 1a- 1d, Fig. 7, Col. 1, lines 12-14, and Col. 6, lines 46-51).

As per claim 25, Stachurski teaches a network device offering enhanced quality of transmitted speech data comprising a communication interface for receiving encoded speech data and transmitting encoded speech data and an analyzing unit, said analyzing unit being able to operate the method for detecting a transition misalignment from a preceding frame according to a waveform matching speech coding to a succeeding frame according to a parametric speech coding according to claim 12 (Figs. 1a- 1d, Fig. 7, Col. 1, lines 12-14, Col. 6, lines 46-51, and also Col 12, lines 6-12 and 21-29).

As per claim 27, Stachurski teaches a system offering enhanced quality of transmitted speech data comprising:

a first terminal comprising a speech encoder for encoding speech and a communication interface for transmitting encoded speech data, a first terminal comprising a speech decoder for decoding said encoded speech data and a communication interface for receiving said encoded speech data, an intermediate network device offering enhanced quality of transmitted speech data according claim 2 (Fig. 1a (encoder), Fig. 1b (decoder), Col. 4, lines 51-65 and “postfilter 144” from Fig. 1b and Col. 5, lines 4-5).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 22-24, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stachurski (US Patent 7,222,070) in view of Ibnkahla (Signal Processing for Mobile Communications Handbook, 2004).

As per claim 22, Stachurski teaches a communication terminal device offering enhanced quality of transmitted speech data comprising a speech encoder including a parametric speech encoding unit, a waveform matching speech encoding unit, and a communication interface for communicating speech encoded data via a communication network, wherein said speech encoder is able to operate the method for providing at least one phase-characterizing parameter for coding a succeeding frame according to a

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parametric speech coding according to claim 1 (Figs. 1a-1d, wherein Fig. 1a (encoder), Fig. 1b (decoder), Fig. 7, and Col. 3, lines 61-67).

However, Stachurski does not specifically mention that the communication network is mobile.

Conversely, Ilnkahla teaches a mobile communication network (Section 20.2.3 from page 20-5).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of a mobile communication network as taught by Ilnkahla for Stachurski's device because Ilnkahla provides the use of hybrid coders for speech coding for Internet Protocols (IP) and Wireless (Section 20.2.3 from page 20-5).

As per claim 23, Stachurski teaches a communication terminal device offering enhanced quality of transmitted speech data comprising a speech decoder including a parametric speech decoding unit and a waveform matching speech decoding unit and a communication interface, for communicating speech encoded data via a communication network, wherein said speech decoder is able to operate the method, for detecting a transition misalignment in transition from a preceding frame according to a waveform matching speech coding to a succeeding frame according to a parametric speech coding according to claim 12 (Figs. 1a-1d, wherein Fig. 1a (encoder), Fig. 1b (decoder), Fig. 7, and Col. 3, lines 61-67).

However, Stachurski does not specifically mention that the communication network is mobile.

Conversely, Ilnkahla teaches a mobile communication network (Section 20.2.3 from page 20-5).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of a mobile communication network as taught by Ilnkahla for Stachurski's device because Ilnkahla provides the use of hybrid coders for speech coding for Internet Protocols (IP) and Wireless (Section 20.2.3 from page 20-5).

As per claim 24, Stachurski, as modified above, teaches the terminal device according to claim 23, said speech decoder being additionally able to operate the method for providing at least one phase- characterizing parameter for coding a succeeding frame according to a parametric speech coding according to claim 1 (Col. 3, lines 61-67).

As per claim 26, Stachurski, as modified above, teaches the network device according to claim 22, said analyzing unit being additionally able to operate the method for providing at least one phase-characterizing parameter for coding a succeeding frame according to a parametric speech coding according to claim 1 (Figs. 1a- 1d, Fig. 7, Col. 1, lines 12-14, Col. 6, lines 46-51, and also Col 12, lines 6-12 and 21-29).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NATALIE LENNOX whose telephone number is (571)270-1649. The examiner can normally be reached on Monday to Friday 9:30 am - 7 pm (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (571)272-7602. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NL 08/29/2008
/Richemond Dorvil/
Supervisory Patent Examiner, Art Unit 2626